OneDep: Unified wwPDB System for Deposition, Biocuration, and Validation of Macromolecular Structures in the PDB Archive

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The Protein Data Bank (PDB) is the single global repository for three-dimensional structures of biological macromolecules and their complexes. Over the past decade, the size and complexity of macromolecules and their complexes with small molecules deposited to the PDB have increased significantly. The PDB archive now holds more than 125,000 experimentally determined structures of biological macromolecules, which are all publicly accessible without restriction. These structures provide essential information to a large, diverse user community worldwide. There are more than 590 millions data file downloads from the PDB archive and more than 1 million unique IP addresses access the archive every year.

The worldwide PDB (wwPDB) has developed a global unified system, called OneDep, for deposition, biocuration, and validation of macromolecular structures to the PDB to meet the evolving archiving requirements of the scientific community over the coming decades. OneDep unifies Deposition, Biocuration, and Validation pipelines across all wwPDB, EMDB, and BMRB deposition sites with improved focus on data quality and completeness across all three archives, while supporting growth in the number of depositions and their complexity.

In this poster, we describe the design, functional operation, and supporting infrastructure of the OneDep system, and provide performance assessments.

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